

## SEMICONDUCTOR LASER DEVICE AND ITS MANUFACTURE

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### Abstract of JP2000068593

**PROBLEM TO BE SOLVED:** To avoid damage during ridge stripe formation by covering a first semiconductor lamination layer which is laminated in a ridge stripe and providing a high electric resistance layer with a stripe opening in an upper edge face thereof.

**SOLUTION:** For example, a first semiconductor lamination layer is formed selectively on a mask pattern opening 21 formed on a semiconductor substrate 1 and is laminated in a ridge stripe. Then, a first semiconductor lamination layer is covered and a first high electric resistance layer 7 with a stripe opening 22 in an upper edge face thereof is formed. A second semiconductor lamination layer is selectively formed on the opening part 22 of the high electric resistance layer 7. In the process,  $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$ : ( $0 \leq x \leq 1$ ,  $0 \leq x+y \leq 1$ ) is used for first and second semiconductor lamination layer materials and a high electric resistance material. Thereby, crystal quality by selective region growth is improved and damage can be avoided since dry etching is not required during ridge stripe formation.

